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The purpose of the study was to determine what science curriculum content material was of value to non-science secondary school teachers, and where, among these curriculum content materials, emphasis should be placed.

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NATURAL SCIENCE FOR THE GENERAL EDUCATION OF NON-SCIENCE SECONDARY SCHOOL TEACHERS

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Albany

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The New York State College for Teachers at Albany requires a terminal course in science general education of all students who are not majoring in the sciences.

This study was undertaken in an effort to determine what science curriculum content material was of value to non-science secondary school teachers, and where, among these curriculum content materials, emphasis should be placed.

The search of the literature was valuable in the organization of this research. Eighty-nine basic concepts and principles of natural science were suggested by science education experts, within the framework of four generalized objectives which would contribute to: (1) a better understanding of the individual; (2) better home and family living; (3) a better understanding of the community, nation, world, universe; (4) a better understanding of science as well as the scientist and how he works.

The suggested list of topics was evaluated by selected samples of administrators, alumni, classroom teachers, and non-science college faculty. This evaluation required each respondent to indicate, for each of the 89 topics, whether it was essential, desirable, or unnecessary for the general education of non-science secondary school teachers.

Comparable scores were established for each topic on the basis of the percentage of responses in each category.

The topics were ranked for relative importance by listing the calculated scores in decreasing order of magnitude. The primary ranks in this listing were to serve as a guide to emphasis in the selection of course content.

1. Conservation of Natural Resources
2. Growth and Development
3. Weather and Climate
4. Atomic Energy
5. Metabolism: Digestion

6. Metabolism: Respiration
7. Metabolism: Circulation
8. Principles of Simple Mathematics
9. Cell and its functions
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11. Scientific Methods
12. Sound: Speech, Hearing, Music
13. Forces in Nature
14. Metabolism: Secretion
15. Metabolism: Excretion
16. Metabolism: Assimilation
17. Metabolism: Elimination
18. Metabolism: Absorption
19. Heredity and Genetics
20. Properties of Living Matter
21. Evolution
22. Metabolism: Photosynthesis
23. Law of Gravitation
24. Weights and Measures
25. Light: Color, Reflection, Refraction, etc.
26. Forces that Change the Earth
27. Elements and Compounds
28. Solar System
29. The Universe
30. Simple Machines

Secondary to the ranking established by the publics served by the course Science 1, parallel rankings were established for students completing the course Science 1, as well as for science teachers.

The evidence and data presented in this study seem to warrant the following conclusions:

1. The ranking of the suggested concepts and principles, as established in this study, does not necessarily provide a basis for general education science curriculum content selection in any locale. The philosophy of the institution as well as differences in publics served by the individual courses will determine where emphasis should be placed.

2. The study does provide a basis for an objective selection of emphasis for science curriculum content for the course Science 1, at the New York State College for Teachers at Albany.

3. Areas of emphasis developed by the ranking of the publics served would require approximately 50 percent of the content to be drawn from the biological sciences. The primary choices of the publics served tended to emphasize concepts and principles dealing with their personal welfare and current events.

4. The study has shown that science teachers anticipated the needs of the needs of the publics served in the choice of curriculum content. The high degree of correlation between student opinions and the opinions

of the publics served found in this study, would eliminate the need and expense of soliciting the opinions of the publics served, since the opinions of students completing such a course could supply comparable information.

5. The techniques employed in this study were practicable. The formula derived for scoring was discriminating under circumstances where the opinions favored the positive responses and where scores were to be compared for samples with different N values.

6. There is need for a periodic appraisal of science curriculum content to maintain interest and appreciation of science among non-science teachers through emphasis on topics of current value in classroom situations.